



August-October 2013

Issued: 1 August 2013

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A warm early spring on the cards

Temperatures over the August to October period as a whole are very likely to be above average in the North Island regions as well as in the north of the South Island, and likely to be average or above average in the east and west of the South Island. Nevertheless, cold snaps, frost and snow conditions will of course still occur in many areas from time to time, as is typical of this time of year. Sea surface temperatures are also forecast to be above average along the east coast of New Zealand and further offshore, with conditions close to average to the west and in the Tasman Sea.

Rainfall for the August–October period as a whole is forecast to be normal or above normal in the east and north of the North Island as well as the west of the South Island, while normal or below normal rainfall is likely for the west of the North Island and the north of the South Island. Normal rainfall is expected for the east of the South Island. Soil moisture levels and river flows are likely to be normal or below normal in the north of the South Island and the west of the North Island, normal or above normal in the north and east of the North Island as well as the west of the South Island. Normal soil moisture levels and river flows are forecast for the east of the South Island.

The equatorial Pacific Ocean remains in a neutral state (neither El Niño nor La Niña) despite some patterns reminiscent of a weak La Niña. International guidance indicates that neutral conditions are the most likely outcome over the coming three months. For the New Zealand region, higher pressures than normal are forecast south of the country, while lower pressures than normal are expected to the north over Australia and the Coral Sea. This circulation pattern is expected to produce a weaker than normal westerly flow over New Zealand.

Overall picture

Rainfall, soil moisture and river flows

Rainfall for the August–October period as a whole is forecast to be normal or above normal in the east and north of the North Island as well as the west of the South Island, while normal or below normal rainfall is likely for the west of the North Island and the north of the South Island. Normal rainfall is expected for the east of the South Island. Soil moisture levels and river flows are likely to be normal or below normal in the north of the South Island and the west of the North Island, normal or above normal in the north and east of the North Island as well as the west of the South Island. Normal soil moisture levels and river flows are forecast for the east of the South Island.

Temperature

Temperatures are very likely to be above average in the North Island regions as well as in the north of the South Island, and likely to be average or above average in the east and west of the South Island. Nevertheless, cold snaps, frost and snow conditions will of course still occur in many areas from time to time, as is typical of this time of year. Sea surface temperatures are forecast to be above the climatological average for the coming three months along the east coast of New Zealand and further offshore, with conditions near average to the west and in the Tasman Sea.

Regional predictions for the next three months

Northland, Auckland, Waikato, Bay of Plenty

Temperatures for the August – October period as a whole are very likely to be above average. Rainfall totals, soil moisture levels and river flows during this period are all likely to be in their near normal or above normal ranges.

Probabilities are assigned in three categories: above average, near average, and below average. The full probability breakdown is:

	Temperature	Rainfall	Soil moisture	River flows
Above average	60	40	35	35
Near average	30	40	40	40
Below average	10	20	25	25

Central North Island, Taranaki, Wanganui, Manawatu, Wellington

Early spring (August – October) temperatures are very likely to be in the above average range. Seasonal rainfall totals, soil moisture levels and river flows are all likely to be in the below normal or near normal range.

Probabilities are assigned in three categories: above average, near average, and below average. The full probability breakdown is:

	Temperature	Rainfall	Soil moisture	River flows
Above average	60	25	20	25
Near average	30	35	40	40
Below average	10	40	40	35

Gisborne, Hawke's Bay, Wairarapa

Early spring temperatures are very likely to be above average. August – October rainfall totals and soil moisture levels are likely to be near normal or above normal, while river flows are forecast to be in the near normal range.

Probabilities are assigned in three categories: above average, near average, and below average. The full probability breakdown is:

	Temperature	Rainfall	Soil moisture	River flows
Above average	60	40	40	35
Near average	30	40	40	45
Below average	10	20	20	20

Nelson, Marlborough, Buller

August to October temperatures are very likely to be above average. Seasonal rainfall totals, soil moisture levels and river flows are all forecast to be in the below normal or near normal range.

Probabilities are assigned in three categories: above average, near average, and below average. The full probability breakdown is:

	Temperature	Rainfall	Soil moisture	River flows
Above average	60	25	25	25
Near average	30	35	35	35
Below average	10	40	40	40

West Coast, Alps and foothills, inland Otago, Southland

August – October temperatures are likely to be above average or near average. Seasonal rainfall totals, soil moisture levels and river flows are all likely to be in the near normal or above normal range.

Probabilities are assigned in three categories: above average, near average, and below average. The full probability breakdown is:

	Temperature	Rainfall	Soil moisture	River flows
Above average	40	40	40	40
Near average	35	40	40	40
Below average	25	20	20	20

Coastal Canterbury, east Otago

August – October temperatures are likely to be above average or near average, for the season as a whole. Early spring rainfall totals, soil moisture levels and river flows are likely to be in the near normal range of the season as a whole.

Probabilities are assigned in three categories: above average, near average, and below average. The full probability breakdown is:

	Temperature	Rainfall	Soil moisture	River flows
Above average	40	30	35	35
Near average	35	45	45	45
Below average	25	25	20	20

Background

Despite the presence of cooler than normal sea surface temperatures in the eastern equatorial Pacific and a positive SOI (the estimated NIWA SOI for July is 0.7, and the 3-month May–July estimate is 1.0), the tropical Pacific Ocean is currently considered to be in a neutral ENSO state. Climate models indicate that these ENSO-neutral conditions are very likely (66 % chance) to continue through the southern hemisphere spring and early summer seasons.

There is good agreement between the dynamical and statistical models that NIWA uses to establish the seasonal forecast in predicting above normal temperatures for the August – October period in the whole of the North Island and the north of the South Island, which is why the comment “very likely” is attached to these temperature forecasts. There is less confidence for the rainfall forecasts, which results in a flatter probability distribution, as shown in the tables above. The rainfall forecasts are also more contrasted regionally (e.g. more “patchy”).

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Notes to reporters and editors

1. NIWA's outlooks indicate the likelihood of climate conditions being at, above, or below average for the season as a whole. They are not 'weather forecasts'. It is not possible to forecast precise weather conditions three months ahead of time.
2. The outlooks are the result of the expert judgment of NIWA's climate scientists. They take into account observations of atmospheric and ocean conditions and output from global and local climate models. The presence of El Niño or La Niña conditions and the sea surface temperatures around New Zealand can be a useful indicator of likely overall climate conditions for a season.
3. The outlooks state the probability for above average conditions, near average conditions, and below average conditions for rainfall, temperature, soil moisture, and river flows. For example, for winter (June–July–August) 2007, for all the North Island, we assigned the following probabilities for temperature:
 - Above average: 60 per cent
 - Near average: 30 per cent
 - Below average: 10 per centWe therefore concluded that above average temperatures were very likely.
4. This three-way probability means that a random choice would be correct only 33 per cent (or one-third) of the time. It would be like randomly throwing a dart at a board divided into three equal parts, or throwing a dice with three numbers on it. An analogy with coin tossing (a two-way probability) is not correct.
5. A 50 per cent 'hit rate' is substantially better than guesswork, and comparable with the skill level of the best overseas climate outlooks. See, for example, analysis of global outlooks issued by the International Research Institute for Climate and Society based in the US published in the Bulletin of the American Meteorological Society (Goddard, L., A. G. Barnston, and S. J. Mason, 2003: Evaluation of the IRI's "net assessment" seasonal climate forecasts 1997–2001. *Bull. Amer. Meteor. Soc.*, 84, 1761–1781).
6. Each month, NIWA publishes an analysis of how well its outlooks perform. This is available online and is sent to about 3500 recipients of NIWA's newsletters, including many farmers. See www.niwa.co.nz/our-science/climate/publications/all/cu
7. All outlooks are for the three months as a whole. There will inevitably be wet and dry days, and hot and cold days, within a season. The exact range in temperature and rainfall within each of the three categories varies with location and season. However, as a guide, the "near average" or middle category for the temperature predictions includes deviations up to $\pm 0.5^{\circ}\text{C}$ for the long-term mean, whereas for rainfall the "near normal" category lies between approximately 80 per cent and 115 per cent of the long-term mean.
8. The seasonal climate outlooks are an output of a scientific research programme, supplemented by NIWA's Capability Funding. NIWA does not have a government contract to produce these outlooks.

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